# The Journal

OF

## The Kansas Medical Society



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**Is it the itch** for notoriety or the desire to get ahead of his competitors that causes a physician to sacrifice the respect and good will of those competitors to his desire to see his "name in print?" There is a very good reason for the unwritten law that physicians shall not advertise or exploit their doings in the public press. Medical ethics is nothing more or less than the desire and ideals of the best men of the profession. The best men in the profession are gentlemen. A gentleman instinctively does not blow his own horn—does not advertise his superior mental endowment. One needs but a slight knowledge of human nature to recognize immediately the fact that a man, who in season and out of season, reminds his casual acquaintance that "he goes only in the best society" and knows only the best people" (you know the breed) has but recently come up and fears that he doesn't show on his face that he is a gentleman. One needs no greater knowledge of human nature to recognize immediately the fact that a physician who announces every operation, or reading of a paper at a medical society, or election to an office in a medical society of five members, is not sure of his position with the public—fears that the public has not recognized his worth.

**It is beyond belief** how stupid some men are in not knowing that the best advertisement is good work and that a grateful patient is worth more than a whole page in a daily newspaper. However, it is not the page or half page advertiser that is the great weariness to the flesh. One of this class moved to Lawrence last winter and took up so much newspaper space as to crowd out the dry goods merchants in telling the suffering people of Douglas county how much they needed him. He could cure where other physicians could not. Consultation free, etc., etc. He reaped a fair harvest among the lowest classes. Families that for years had been receiving free treatment from local physicians mortgaged their furniture to pay him fifty, seventy five, or a hundred dollars. But by summer he had exhausted the field and was compelled to move on. No physician in the town was either irritated or annoyed by him. In a general way they deplore the fact that he could not be driven out of town but there was no personal feeling of annoyance or shame even. They didn't have to be ashamed of him because he had placed himself entirely outside their class and the public recognized this. The advertiser and self-exploiter who is the constant thorn in the flesh of the decent profession is he of the news-item. "Dr. ——was called to—— today on professional business." "Dr. ——is away for a day or two seeking a much needed rest." And the most common of all the insertion of which the following is a good example:

"Dr. J. C. was called to Nemaha county Monday where assisted by Mr. and Mrs. S. S. Reed of Soldier, he performed a very critical operation on Mr. Hugh Johnson for acute gangrenous appendicitis. At this writing he is doing nicely and hopes are entertained for his recovery.

**It is the association** with these men that demands grace. We recall an operation performed by a physician upon a well known citizen in such a way that no one witnessing the operation—either nurse or assistant—thought the patient had a single chance to recover. Finally the assisting physician interfered and did most of the work for the sake of the helpless patient. Yet that operator had the effrontery to insert daily notices in the local papers during the whole time that the patient was in the hoshospital, beginning with the "Dr. Blank performed a very critical operation on ——— today," and ending with the "Dr. Blank announces —— operation to have been a complete success. ———will leave the hospital tomorrow." And those assisting physicians are compelled to see themselves classed with that man in public opinion and must rub elbows with him in their local medical society or get out of it. It is these men, not the Dr. Carson's and the German-American specialists who are a constant irritation.

**Several months ago** the JOURNAL described a plan that an Indiana county society was trying in order to abolish this nuisance. A member of the society was appointed to clip all questionable newspaper insertions containing names of the members and to read them at each meeting of the society. Each physician was given an opportunity to explain how the item containing his name came to be published. We are of the opinion that there was no penalty attached to the repeated inability of any member to give satisfactory explanation. Yet it would seem that by this method the habitual offender would be driven to do one of two things: Either to leave the society or live up to its ethical requirements. Any man who, after having his attention called to the unfairness and bad taste of self-advertisement continues his self-exploitation thereby proclaims himself a member of the quack class and unfit to associate with the honorable men of the profession. Your editor believes in reclaiming a man when possible; he believes in patience and forbearance. But isn't there a limit beyond which patience and forbearance become indifference? Have we a right to allow people whose conduct we apparently sanction, lower our profession in the eyes of thoughtful people?

**The Prohibitory Muddle.**—Governor Hoch has brought suit to oust the city officials of Kansas City for not enforcing the law against the sale of liquor. We hope that he will succeed. Since your editor has had to live in Kansas City he has felt that the lack of civic pride there shown, the disregard of higher ideals, and the barter of morality for a few extra cents from the lowest class of society are marked characteristics. The laxity has infected all avenues of life—ii takes at least twenty-four hours for the express company to deliver packages, smells are superabundant; in other words, we believe that this violation of law has been the chief obstacle in the path of Kansas City's growth—and has illustrated the old saw, "Penny wise and pound foolish." Now since we believe that the physician should not be merely a doctor but rather a chief citizen of his town, we would urge upon our colleagues the study of Kansas City's misfortunes in order that they may learn to use their influence in their own towns for sobriety and righteousness. Public health will be as much improved by attention to the enforcement of the prohibitory amendment as by fumigation after tuberculosis. Kansas City is a better town for opening up a medical school dispensary because of its 165 joints—because there is more pauperism and disease present,—but that hardly recommends

the town for a residence. Missouri is shaming Kansas by the contrast.

**Most Physicians** seem to be agreed that local option combined with high license where liquor must be sold is the best solution of the saloon problem. However, that solution is not yet possible in Kansas because of the constitutional provisions for prohibition. The Assistant Secretary of State, H. P. Wilson, has made an excellent suggestion which we believe should help to redeem public morals in this state. It is that all permits to sell liquors, (e. g. in drug stores) should be heavily taxed, and and this tax should be utilized to establish at Topeka a special court before which all charges of violating the prohibitory amendment should be tried. The jury would be summoned from all over the state, and every effort made to eliminate local influence. In other words the structure of the federal courts should be imitated. Before such a court good testimony would have a fair hearing and the brewers be unable to intimidate the jury. The expense of having to go away from home to defend themselves would make most jointists chary about flagrant violations of the law at least.

**An Enterprising Society.**—Your editor had the pleasure recently of attending a meeting of the Sumner county society. He found 25 men present, and they all seemed to have a good time. Dr. Bowers talked on the sins of the pancreas, a couple of papers were read, and the society went over and lunched at Dr. Halliday's office. So much was the meeting thought of that Doctors Wells and Updegraff of Anthony drove 25 miles and took a train in order to be present. Truly Secretary Jamieson ought to be proud of himself—and his society still prouder of him, for it is his work that has the society so successful. He has managed to get the good men together—and then things happen. All this illustrates our frequently repeated statement that the society's fate rests with the secretary.

**Plans are already** under way for a grand meeting at Topeka next May. President Bowers expects to have one of the Mayo's down, and also some good internist from Chicago present. If the county secretaries find any specially strong papers this winter they should see that they are listed on the State program.

**The Best Weapon** of the right is education. The best way to overcome quackery and public indifference is through education. Hence we believe that every high school and college should offer courses in domestic

hygiene. Under that term we mean an explanation of the nature of disease and its causation, the conditions of health in the home and about town, simple nursing, the laws of cure, etc. This is of course along the line attempted by the school physiology work of recent legislation but it is yet so different that the need is not met by the teaching of the elements of anatomy and physiology to children. The course should discuss all the more common diseases and the principles of treatment. It should include vaccination and serum treatment. In fact it should be a popular course on the subject of rational medicine. Only thus can the man who has a cure-all be forestalled.

**Patent Medicines and Popular Magazines.**—Physicians should appreciate and help those secular journals which are working with us for the betterment of the public health by refusing patent medicine advertisements and by warning their readers against the use of such things. Collier's Weekly is doing especially good work along that line just now—following the example of the Ladies Home Journal in getting special articles on the subject. The special articles thus far announced are in the issues for October 7, October 21 and November 4. On the one hand we should cut out all periodicals violating decency in parading patent medicines; on the other hand, **every reader of this Journal who has any regard for righteousness should buy these issues, read the articles and then make his patients read them.**

**A Prominent Physician of America** writes us that he believes that "the profession of this country is being frightfully humbugged by the secret proprietary manufacturers, much more so than are the people by the 'patent' medicine men; **and the Journals of the state societies must fall in line, even though they lose part of their advertising income. One of the most important things for the profession to learn is that if it does not support the medical journals, the nostrum men stand ready to do so.**" Are **you** ready to have the advertisements of proprietary medicines cut out of this JOURNAL to the extent, say, of five hundred dollars? Or, don't you care a 'continental' about the whole business? One of our councilors told us the other day that our men were not yet ready to put their hands into their pockets to support a journal without patent medicine advertisements. Is this true? Are the men of Kansas so blase, so "blunted by the long disregard of the prohibitory law," so dull of moral fibre, that the question does not appeal at all to them?

**Water Supplies** and the sanitation of watersheds, a subject brought to mind by the receipt from the University of Illinois of a book of 254 pages

on the **Chemical survey of the waters of Illinois,** deserves considerable attention in Kansas. As Dr. Crumbine pointed out in the JOURNAL last February the condition of the banks of the brooklets determines whether or not we shall have typhoid fever. Kansas cities are just in the making, and if a pure water supply can be established now the loss of much treasure and many lives will be avoided. Professor Bartow, who was doing the work of studying the water supplies of Kansas has, however, gone to the University of Illinois—a promotion for him but a loss for us—but we hope that the University will soon see its way clear to put some other man at this task. After an accurate study of the waters, then there is needed such legislation as shall keep pure those intended for drinking purposes.

**Need of Training.**—The following clipping refers to a condition just as true in medicine as elsewhere:

"Chicago, Sept. 27,—The era of the 'self made' is on the wane. Efficiency can no longer be manufactured or home made. Competition of the present day is too much for the 'self made' man.

So holds Prof. Nathaniel Butler pricipal of the school of education in the University of Chicago. He spoke yesterday at the closing session of the twentieth annual convention of the Brotherhood of St. Andrew's in Mandel hall at the university. The subject of his speech was "Education as a Factor of Efficient Manhood." Prof. Butler spoke in the place of President William R. Harper, who was to have attended the session.

"The terms, 'self-made' man is a mere fallacy," Prof. Gutler declared. The 'self-made' man's success is due only to unusual ability. Efficient manhood—the manhood that ought to be offered to the world—can no longer be home-made. In this time of competition, the world is willing to pay the highest price for the efficient man, just as for articles of commercial use."

MORAL—Advise your protege to get a thorough training in arts and medicine before he tries to practice.

**Dr O. M. Longenecker** has published his paper read at Wichita on Diseases of the Pancreas in The Medical News for August 12, 1905. Inasmuch as Dr. Longenecker has thereby violated the by laws of the Kansas Medical society which state that all papers read at its meetings are the property of the society—this paper will not appear in the JOURNAL.

## MEDICINE AND PSYCHISM.

SALINA, KANS., Oct. 7, 1905.

EDITOR JOURNAL.—

I wish to show my appreciation of the Journal of the Kansas Medical Society by this "sign" that is, by this letter. I know of no medical journal that is more free from irrelevant, common place trash now before the profession. In looking over its pages and upon reviewing the several numbers containing some most elegant and able papers which were read before this meeting of the State Society at Wichita, I could not help but ask myself the question, what per cent of the "docs" subscribing to this journal read it carefully, critically and intelligently? The Wichita meeting certainly did have a number of most excellent papers presented before it. One notable thing is that there were not so many papers there, so far as I can discover, presenting or betraying the modern surgical craze—that mania for turning most every case into a knife case, in imitation of the fellow who would try to turn every case into fits, as he was "hell on fits."

But I trust you will pardon this little digression, and permit me to speak especially on the paper on "Psychics in the Practice of Medicine, by Dr. P. S. Mitchell, of Iola, Kansas. There were other good papers, but the one I refer to opens a wide field for thought and investigation. Perhaps there were those present when that paper was read who did not comprehend its height, depth, length, and breadth, and who might declare it something like "tommy-rot". It would seem to be well and in accordance with the eternal fitness of things that the medical profession take a step forward in Psychiatry. Christian Scientists and other drugless healers do cure diseases by and through the subtle power of suggestion, and the profession might as well admit it and honestly inquire into the modus operandi of the new law of suggestion. Every intelligent and observant physician cannot fail to recognize that there are psychic force at work in his patients, and especially those of the neurasthenic type. And these neurasthenics are every day becoming more and more in evidence. Sanitary science has been doing much to modify and stamp out such diseases as small pox, and other infections and contageous diseases but the increase in nervous and mental diseases must be met by the medical teacher. It cannot be denied but that the border land between crime and insanity is being enlarged, and to where is society to appeal for protection against crime but to the advanced thinkers and investigators of the medical profession, into the law of psychic phenomena?

But I did not start out to write you a long and labored letter on Psychiatry, but simply to call "doc's" attention to the necessity of his advancing in his knowledge of the human mind and soul. This is a very materialistic age, so much so indeed that the medical profession has become commercialized and has almost lost sight of its altruistic mission and the principles of medical ethics.

Respectfully,

N. D. TOBEY, M. D.

**Editorial Note.**—Dr. Tobey is evidently as much offended when called familiarly by the laity "Doc," as we are. He evidently refers by that title to some of the profession who preferring popularity to erudition, work on the street corner more than in the library and laboratory. We are all in danger of becoming one-sided; the surgeon is one extreme, the mental healer the other. Each should recognize that he is not the entire profession and that wisdom is not liable to die with him. Realizing then one's limitations each can learn from the other. But all of us should discourage the appellation, "doc."

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## THE TREATMENT OF DEFORMITIES.*

JAS. NAISMITH, M. D.,
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Lawrence, Kansas.

From the title chosen one might readily think that it belonged to a book rather than to a paper, for the subject as stated is a very large one. But it was chosen because it seemed impossible to give, in the title, an exact idea of the phase of treatment which I wished to discuss. Therefore the attempt will not be made to give the treatment for all the deformities, not even to give all the treatment for one class, but merely to give one part of the treatment of one class of cases. This part is, in my estimation, a very essential and indeed if taken in time is the only treatment needed, so that it may assume the nature of prophylactic treatment, or after treatment.

Colleges and text books give us most of the treatment for all kinds

*Read before the Kansas Medical Society at Wichita, May, 1905.

of deformities, but neither gives the prominence to the prophylactic or the after treatment that seems to me an absolute essential of the best method of treating these cases. By the term, deformity, we mean, "Any deviation from the symmetrical proportions, or the proper alignment of the structures," It will thus be evident that a great many persons who consider themselves as models of grace and elegance would be classed among the deformed. Indeed, is is only a question of degree between the person who has stooped shoulders and the person with Kyphosis, and the same is true of a great many of the other deformities. The evils resulting from these are not esthetic alone but they interfere with the physiological functions so that a deviation from the normal which would not affect the esthetic taste (because the ease with which it may be covered up,) will yet affect the individual to a degree which we do not appreciate. And while it may not be true that "the clothes make the man," yet it is very frequently true that the clothes preserve the outward appearance and I have not a doubt but that if it were the established custom to appear in public in the garb which Mother Nature gave us, many a physician would be called upon to treat persons who pass for normal and well developed individuals.

I do not wish to touch on the treatment of those cases where there is any disease of the bone, causing destruction of osseous tissue. But wish to consider only those where the bone is sound, though it may be greatly out of shape.

In order then to get a good view of this condition, we will look for a moment as the various causes which produce or tend to produce these results.

The first of these is, any influence which will produce an unequal development of the two sides of a supporting bone or of one of two supporting bones, e. g., the most common cause of scoliosis is the habit which so many persons have of standing on one foot and resting the other. When this habit has been formed one leg grows while the other is restrained and thus we get an unequal length of the limbs and a consequent tilting of the pelvis with a compensatory curve in the spine and a lack of symmetry in the contour of the two sides. This condition is found in no less than 54 per cent of the male.

The extent of this shortening ranges from ¼ of an inch to 1½ inches and in one of the latter cases the person had been treated in a Kansas City hospital (of a sectarian school by the way) for a period of six months for spinal curvature and the case was not in any way improved as the curve was compensatory and could not be restored until the limbs were made equal.

Again we have a deformity due to the excessive development of one

set of muscles which acting against the opposing muscles overcomes the weaker set and produces a condition in which there is a deviation from the normal straight line. This is especially true of the relation of the muscles of the spine to those of the neck and shoulders, producing stoop shoulders, lateral curvature, and inequality of he shoulders.

Another very common cause of deformity is the injury of one set of muscles or ligaments or tendons which has not been properly cared for and where the separation has increased to such an extent that the natural tension has been removed and the opposing muscles carried the limb to one side. There are few who have played base ball who do not carry around such a deformity as a reminder. And while in the case of a finger we may even view it with pride, as the soldier views his scars, yet there are cases where the deformity is a life long source of sorrow. Especially is this true of boys who tear muscles and are ashamed to make much complaint and treat the matter lightly. We find these, when grown to manbood, very seriously deformed.

One of the worst cases of deformity in the University today is a young man who tore a muscle in a wrestling bout with a neighbor lad, and while he does not blame anyone for his condition yet it is a fact that he might have been straight today had he allowed it to be treated as it ought to have been.

In cases of this kind very often the deformity is not noticed for weeks or even months and it is never safe to neglect a torn muscle or tendon, escpecially if it is in a location where it may affect the symmetry of the body.

Again we have as a cause the atrophy of a muscle; this may be due to an injury to the nerve or destruction of the nerve through disease. When the muscles of a limb are all equally involved there is a symmetrical atrophy and the limb is merely reduced in size and function with a slight torsion, but when this atrophy is confined to one set of muscles and the antagonist, are not affected then it is that we have the worst form of deformity.

Another cause is a lack of tone in the general muscular system due to a lack of vitality in the nervous system. In these cases there is a deformity produced by the pressure of gravity either destroying the natural curves of the spine or exaggerating them, or stretching certain ligaments which allow the limbs to assume abnormal positions. This condition is very frequently found in children who are overworked in school or who have some condittion which prevents a good nutrition; e. g., enlarged tonsils, adenoid growths, or hypertrophy of the mucous membrane of the respiratory canal. And while this may seem to be a comparatively rare case yet it is very much more common than we suppose.

In the treatment of these cases the osteoclast, the bandage or brace, the knife or the saw may form a major part but the one who resorts to

these at too early a date or thinks that the matter is finished when this is done misses the main part of the benfits of orthopedic surgery. And many a man is today wearing a cumbersome brace who might have had full use of his limbs.

The first indication in these as in all cases is to remove the cause whatever that may be and allow the normal conditions to obtain. In the case or the careless habits, all that is necessary is to correct these and nature will restore the equilibrium. This can be done only by one who can suggest to the person the need for care on this score. I have found that to let the person see the amount of deformity in a glass or by a chart will often arouse sufficient interest in the subject to have it corrected. It is true that some authorities do not consider these deformities but the fact is that once a habit has been formed there is soon a change in the structure and this change accentuates the habit and often this leads to an increase in the change of the structure. So what begins as a very slight change at last twists the individual out of shape. In the early days when almost every person worked out of doors, or at least took a great deal of outdoor exercise, this condition was not nearly so frequent, but the tendency of today is to assume certain positions and retain these for quite a time and this leads to evil results. This same lack of out door life leads to the acquisition of a body lacking in the natural tone which is so necessary to preserve the erect position whether sitting or standing and it is very necessary to keep the body in its best condition. These cases need some form of exercise which will break down the old and unused tissue and replace it with good fresh tissue both of the muscles and the nerves and the erect carriage will be preserved. Tonics may help, but only when the individual is so weak that there is danger in breaking down tissue. Then the passive movements should be resorted to in order that these may be a demand for new tissue. If this lack of tone is due to an obstruction to respiration the thing to do is to remove the obstruction and allow the full nutrition; then the normal vitality will be restored and the person will maintain the erect posture and the bones will be preserved in their normal condtition. It may be that the inidividual needs to be driven to take some form of exercise in order to maintain the tone of the body. And it is a fact that the less of this kind of work the person does the less he cares to do and the more he needs it. In the case of an injury to a muscle there is a great tendency to let nature restore it and while this will be accomplished in a great many cases yet there is need of great care lest separation be so great that there will be no union and in these there should be no hesitation in opening up and bringing the severed parts together and restraining them with stitches. While surgeons do not hesitate to do this yet the general practitioner usually trusts to luck to restore them. But for lack

of the natural guy, for all the muscles in their tonic condition act as such, the bones become compressed at one point and thus the individual becomes twisted out of all shape.

In the cases of atrophied muscles where the injury is not congenital it is often possible to restore the normal condition and thus preserve the part intact. This is especially true where the condition is due to some of the fevers. And the fact that the cause was active a number of years ago need not discourage for muscles may be restored long after the voluntary power of motion has been lost. In one case the voluntary power of the muscle was restored 15 years after the fever had left its results and the foot was twisted all out of shape. In another case where the voluntary control had disappeared in the peroneal muscles after a severe case of typhoid, this person was restored after about two months treatment so that it is impossible to detect any difference in the two feet.

It is not always possible to restore a muscle that is deprived of its motor stimulation yet there are many cases which could be cured or at least greatly relieved. Of course this is most easily done when the attempt is made early, but it may be accomplished even after there seems very little chance to accomplish anything. Indeed the fact that there is no response to the electric current is no assurance that there can not be a recovery. And it is this fact which makes one anxious to have the message go forth that there is hope for even those. In two cases which came under my notice this last year there was no electrical response and yet after some time the response began to be noticeable and soon the voluntary control returned, and in one case the control was absolute. In the other the patient became impatient and took advantage of an advertisement to obtain a speedy recovery and has worn his foot in a cast for about six months and the muscles which were fast regaining their normal condition are about in the condition in which thery were at the beginning.

It is true that this condition of the muscles will change the structure of the bones and then there is necessity for operation, but the surgeon who thinks that the work is then done falls far short of accomplishing his object, and the wonder is not that so many relapses but that all do not return to their abnormal condition for there is nothing to prevent the same well muscle from pulling the limb into the same position from which it was rescued. Where the injury is in the bone itself and the muscles are symmetrical the correction of the bone is all that is necessary, but whenever the deflecting cause is in the muscles themselves then the muscle must be restored before there can be recovery which will be permanent.

The procedure is to restore nutrition by electricity, heat, massage, vibration and stimulating liniments. At frequent intervals from the very

first, attempts should be made to produce motion both voluntary and by means of the electric current. And while it may be weeks before there is any response to either of these, yet continued effort brings its reward and all that is gained will be held even though there be an interruption

In one case where there was an injury to the cord at the 6th cervical there was pronounced atrophy of the muscles of the shoulders and arms and there was a strong tendency to deformity but by persistent effort on the part of the individual this tendency has been overcome and the muscles are recovering both their tone and their size.

The conditions upon which I insist, as a vital part of the treatment of every one of these cases are, The restoration of the normal nutritive powers of the muscles and nerves, The restoration of the normal motive powers of the parts and voluntary development of the muscles affected.

## MY FIRST FRACTURES.*

J. D. CLARK, M. D.,
Wichita, Kansas.

Fracture means a solution of continuity of structure. It does not necessarily mean complete separation of the fragments of the injured bone; for we see many incomplete fractures or infractions. They depend for their existence upon (a) some traumatic force applied to them that is greater than their resisting strength or (b) some intrinsic pathologic change, as osteoporosis, malignant growths, etc., or some constitutional disease that has rendered the nutrition faulty thereby weakening the whole bony structure. Trauma that produces a fracture at the site of its application or impact produces a direct fracture, while an indirect fracture occurs at some other place than the site of the trauma, either in the same bone or a neighboring one. Generally speaking we meet with more fractures among those whose occupations expose them to risks and the use of heavy machinery of different kinds. For the same reason persons of early and middle adult life are subject to more liability to fractures than children or the aged. Old age is not so much a predisposing cause owing to changes in the composition of bone. It is rather due to the absorption of the cortex of the shaft leaving it actually thinner and to the disappear-

*Read before the Kansas Medical Society at Wichita, May, 1905.

ance of the trabeculae of the articular ends: that is there is a gradual diminution of solid bony structure in those of advanced years. We see this same process going on in some of the constitutional diseases thus increasing liability to fracture in those suffering from them. This, too, probably explains the tendency to complete and transverse fractures in the aged and the occurrence of incomplete fractures in the young.

I have up to this time treated 65 fractures occurring in 42 patients. These patients have ranged in age from 3 years to 70 years. The percentages of the different decades are: First 14½ per cent, second 33 1-3 per cent, third, 14 1-6 , fourth, fifth, and seventh, 9½ per cent each, sixth 7 1-7 per cent and the eighth 2 1-3 . As to the etiology only one case sustained fractures as result of constitutional disease. This was a man 43 years old suffering with osteomalacia. He was brought to the hospital with a fractured humerus, and in removing him from the ambulance the neck of left femur was fractured. Later in changing his bed the nurse fractured his other humerus. He was removed to his home were he died a few days later. No post mortem was allowed. Indirect violence produced 59 per cent, direct violence 14 5-7 per cent, crushing violence by machinery and heavy weights 18 4-7, gunshot 7 5-7 per cent. Of those produced by indirect violence all were simple fractures and were reduced without open operation. Of these simple fractures 66 2-3 per cent were reduced and dressed without an anaesthetic. An anaesthetic was necessary to 42½ per cent of all my cases. Of the eleven compound fractures seven were comminuted and in five there was a great destruction of bone and soft parts that amputation was necessary. Three of the compound cases came to me in an infected condition. Of the 43 fractures of long bones 5 were compound and of these 2 had to be amputated, both being crushing injuries by car wheels. Two of the eight Colles' fractures were accompanied by fracture of the ulna. Two crushing injuries of shaft of tibia, and one fracture from fall were without fracture of fibula. As to the kind of bone injured 34 of my cases were long bones, 20 short bones, 2 flat bones, 2 vertebral, 7 bones of head and face.

My First Fracture was the clavicle. The second was a compound fracture of the 3rd and 4th metacarpals caused by tha hand being caught between the sidewalk and a corner of a piano as it slid down a stairway. Part of the muscles and fascia were protruding from the large irregular wound on palmar surface of hand. Under anaesthesia the hand and wrist were thoroughly cleansed and the torn and contused tissues were removed. After thoroughly irrigating the wound and removing two detached pieces of bone the soft parts were coated over the replaced bone and a palmar splint was bandaged over the antiseptic dressings. Union took place without suppuration. The nerve between the two fractured bones was caught in the callus and caused considerable pain for several weeks but it disappeared after the callus was absorbed.

CASE II.—I wish to report it because it illustrates the late effect of crushing injuries on soft parts. A lad 16 years old, an elevator boy, was caught between the edge of the car and the floor above. The femur was fractured at junction of lower and middle thirds with contusion of skin and muscles. Owing to interposition of soft parts the ends of fragments could not be approximated until an anaesthetic was administered and considerable manipulation resorted to. Mild antiseptic dressings were placed over the superficial wounds and heavy cardboard was moulded to the fractured bone. The leg was immobilized by long external splint. The leg was dressed frequently owing to the superficial injuries. In this case unusual wasting of muscle was noticed early and later a tardy union was found. Passive motion and massage were resorted to with results that firm union took place and muscle tone was restored. This boy was put on crutches with a high heel and sole on shoe of sound foot, as soon as we suspected delayed union.

CASE III.—Mr. H. 50 years old, very muscular, and rather heavy, fell from a load of hay head foremost. He struck on back of head with chin flexed on chest, and his weight caused him to careen over so that he lay on his back on the ground. He was removed to town were a physician saw him some hours later and found him to be paralyzed from axillae down. He was placed on train and brought to hospital where I saw him with Dr. Hagan. He moaned constantly and complained of indefinite pain in head, neck and shoulders when questioned. He was not rational and could not tell how accident happened. Examination showed loss of motion and sensation below a point 2 inches above nipple on both sides. Loss of all motion in arm save coarser flexion. Urinary continence and priapism. There was a slight anterior dislocation of head but no crepitus could not be elicited nor could any bone deformity be palpated owing to heavy muscles of neck. Fracture of cervical vertebra was diagnosed with complete shearing of cord. He was placed on firm mattress with small pillow under head. Owing to length of time since injury and the unusual amount of moving he had been compleed to undergo, operation procedure was advised against, thinking it gave no hope of restoration of lost function. He was given predigested food and bowels and bladder were emptied at regular intervals. He carried a little temperature from the first time I saw him and on the 4th day it began to rise until just before death on the 5th day it reached 107°. His pulse varied from 110 to 130.

Post Mortem showed a complete comminuted fracture of the 7th cervical vertebra with crushing of cord. The jnjured part of cord was an inch long, and showed a slight hemorrhage in the sheath. The tip of spine of the 4th dorsal vertebra was also torn off.

CASE IV.—Mrs. C. aged 68 years, fell down cellar steps. Dr. Purdue saw her a short time after and diagnosed intracapsular fracture of neck of femur. Sand bags were used to keep the limb in position until the 2nd day when the fragments were approximated under chloroform and a long external splint applied with adhesive straps to hold the foot in position. The next day the patient was removed to St. Francis Hospital where we applied Maxwell's anatomic dressing and traction appliance. The patient did not experience any pain or inconvenience after the first few days and went on to a rapid recovery. After six weeks she was allowed to be up and around the room on crutches. She walked with the use of cane when seen three months after the injury and had no shortening or eversion of foot. This was my fourth case of fracture of the neck of femur and the only one I think of with pride. Two of the other three would not submit to any form of dressing and during absence of attendants got out of bed. The Maxwell method of treating fractures of neck

of femur is so simple, so easily applied and makes is so much easier to handle the patient that it should be more widely used.

Case V.—Geo. R. 17 years old, was carrying a loaded shot gun on a buckboard. It slipped out and was discharged. As he leaned forward to catch the gun the charge of shot struck him just over the outer end of clavicle. The soft parts were blown away, the coracoid process off and part of spine of scapula were torn off, leaving the capsule of the joint intact. There were two lines of fractures running obliquely across the wing of scapula. I did not see him until two days after the accident The attending physician had filled the wound which was 3½ inches wide and 6 inches long with iodoform and covered it with rubber tissue. When I saw the boy he had a temperature of 103° and pulse 140, was very weakened and anaemic. Under anaesthesia the iodoform was removed and the wound thoroughly cleansed. Twenty-four shot and a number of pieces of bone were removed. The belly of the deltoid and upper part of the trapizius muscles were shot away. Hot boracic acid compresses were kept on the wound and the arm was immobilized. The temperature went to normal on second day and symptoms of iodoform poisoning cleared up. On the eighth day he was again anaesthetized and the ends of the deltoid muscles dissected loose and drawn together with mattress sutures of heavy pyoktanin catgut. Two retention sutures were used to help relieve the tension on the skin and coapted muscles. It was impossible to close the deficit in the trapezius muscles. The skin was sutured over the coapted muscle with pyoktanin catgut. The arm was dressed in an extreme elevated position. Union took place and function of deltoid was restored, and no impairment of shoulder joint followed.

An X-Ray examination 3½ years after the injury shows the coracoid process missing, and quite a defect in the spine of scapula. Patient says that he uses the arm without any restriction of motion or loss of power.

A study of the different forms of splints and dressings that have been used in treating fractures is interesting and shows a gradual change from heavy complicated splints and appliances to the highest and simplest that can safely be relied on to immobilize the injured part.

In general the first dressing applied to a simple fracture should serve to prevent injury to the soft parts by the ends of the fragments and to retain the broken bone in as good position as possible. As a rule the lighter and simpler the first dressing the better . Unless the materials are at hand to apply permanent splints and dressings and the fragments can be easily and quickly restored to normal position, it is better to wait until the patient can be removed to a suitable place and help secured. Any article of sufficient dimensions and strength to support the weight of the injured part will answer the purpose of first dressing. A pillow or blanket splint or a cast for padding and three or four handkercihefs for bandages to bind the fractured leg to the sound one or a fractured arm to the chest wall will answer the requirements of the first aid dressing. Great care must be exercised to apply these first dressings snug enough to immobilize the fragments and still not impede the return circulation, nor to cause pain when the limb swells. If there are any injuries to the skin they should

be treated with the most rigid asepsis and antisepsis fromthe very beginning for fear of some already existing communication with the seat of fracture or the possibility of a later extension of suppuration if infection is not carefully guarded agianst. When possible protect the injury with freshly sterile gauze or in its absence with freshly laundered towels until the wound and surrounding skin can be properly cleansed and sterilized and appropriate dressings applied. A wound of superficial structures is sufficient indication for daily dressings until it is healed even if the retentive dressings have to be disturbed to do so. All things being equal, the permanent dressings should be applied as early as possible. The greatet care must be exercised to keep the fragments in correct apposition during the application of this dressing.

If needed, anaesthesia should be administered to reduce the fracture and secure normal position of the bone. Too many bad results are traceable to attempts to reduce fractures without the relaxing effect of anaesthesia. I have found in a number of my cases, especially Colles' fractures, that I could more readily reduce them by slightly increasing the deformity and then with traction in the axis of the bone bring it back to normal position. The ends of the bone are unlocked by first increasing the deformity. Where the ends cannot be accurately coapted under anaesthesia the open operation should be resorted to for with strict aseptic precaution the danger from the operation is far less than that of faulty or non union. As a rule the fracture can be more easily reduced when we know the line of application of fracturing force and reverse it. I believe that too little attention is given to the matter and mode of application of the fracturing force in the treatment of these injuries. It not only aids in making the prognosis but it is in a very large percentage of cases of great help in determining the proper procedure to correct the deformity.

The choice of splint should be governed by the kind of fracture and bone involved. In my own cases I have used plaster casts and board tin, wire and board splints. For fractures of upper extremity I have used the card board more than any other form of dressing. When thoroughly wet it can be moulded to any part with the extremity held in any position. When dried it furnishes ample support to the fractured bone and has the further advantage of being light. This form of splint can be more easily removed to massage the injured limb or to treat any superficial wounds than when plaster casts are used.

Fractures of lower extremity are, as a rule, more safely treated with plaster casts during the time the patient is confined to bed, but some lighter form of dressing is preferable when the patient is put on crutches. When paste board or other light material is used but little cotton padding

is necessary as the wet paper readily moulds itself to the form of the limb and unequal pressure is eliminated. If a plaster cast encases the limb cut it clear through on either side converting it into an anterior-posterior gutter splint which can be secured by a roller bandage or a few strips of adhesive plaster. This gives us all the advantage of a plaster cast and further enables us to open it at will to inspect the limb, give massage or treat any superficial injuries.

The most important consideration in the early treatment is to prevent infection and suppuration. The skin surrounding the injury and a large area above and below taking in the whole circumference of the limb should be scrubbed with soap and water then with benzine or alcohol and finally washed with some antiseptic solution. During this process protect the wound with some antiseptic dressing. After the surrounding surface is clean the wound should have the same careful consideration, using fresh water and solutions to remove any infectious material from the contused tissues. If the end of the bone is still projecting from the wound see that no foreign matter has lodged in the medullary canal or roughened edges or cortex. Irrigate the wound with antiseptic solution and explore the wound with carefully sterilized finger to ascertain the extent of bone injury, and to remove any piece of bone that may have become separated from the periosteum and tissues. After replacing the ends of fragments be sure that the loosened flaps of periosteum fall back into their proper places. The soft parts of the skin should be drawn together over the injured bone with sutures if they do not close properly without . If one is not sure of having eliminated every possibility of infection a drain should be placed in the lowest angle of the wound and a wet antiseptic dressing should encompass the whole limb at seat of fracture. The splint must be adapted to meet the requirements of the compound injury and such that access can be had to the wound without disturbing the fractured bone too much. If the wound heals without suppuration it will do so before the permanent splint need be applied and if suppuration supervenes the fracture will not unite any way until the infected bone is cast off by the granulations so that the immediate healing of any superficial injury is the first and most important consideration of the early treatment.

## SUMMARY.

| CASE | AGE | CAUSE | BONE | KIND | TREATMENT AND RESULTS |
|---|---|---|---|---|---|
| 1. Mr. J. | 27 | Crushing | 3 and 4 metacarpals. | Compound | Anaesthesia, antiseptic precautions. Spicules removed. Suture of soft parts over coapted fragments without drainage. Palmar splints. Nerve engaged in callus for several months. Bones united in normal position. |
| 2. Mr. P. | 20 | Fall on hand. | R clavicle | Simple | Reduction Velpeau and Sayre bandages. Result good. |
| 3. Mr. H. | 43 | Osteomalacia. | Femur-Humerus | Simple | Reduction. Splints. Left hospital, died few days later. No post mortem. |
| 4. Mr. D. | 28 | Crushed by machinery | Toes of left foot crushed | compound comminuted | Part crushed bone had been removed and soft parts sutured 2 days before. Sutures removed and hot antiseptics applied. Removed remains of toes. Skin destroyed by injury. Healed by granulations. |
| 5. R. D. | 5 | Fall | Colles-both bones-ulna in middle, clavicle | Simple | Anaesthetic. Board splint on arm. 2nd day plaster Adhesive plaster on clavicle. Result good. |
| 6. Mr. C. | 48 | Fall | Colles | Simple | Reduction. Board splint (ant.). 48 hrs plaster. Result good. |
| 7. G. R. | 16 | Gunshot | Scapula | multiple cp'd. | Anaes. Removed spicules and shot. Hot compresses. Later drew ends of deltoid together. Result good. No lost function. |
| 8. Mr. F. | 69 | Fall | Extra capsular, neck of Femur | Simple | Plaster casts. Tore off several at night and got out of bed. Bad result. 3 inch shortening foot inverted. |
| 9. Mr. M. | 28 | Crush | 2nd, 3rd, phalanges little finger | compound comminuted | Anaesthetic, amputated middle 2nd phalanx. |
| 10. G. P. | 16 | Crush | Femur middle | Simple trauma to soft parts | Anaes. Reduction. Antiseptic dressings. Binder's board around thigh. Long external splint. Delayed union. Put him on crutches and gave massage. Result good. |
| 11. A. T. | 24 | Crush by car wheel | left foot and leg a few in. below knee | Compound comminuted Tibia fissured into head | Anaes. amputated 4 inches below knee. Drained, slight suppuration. |

| CASE | AGE | CAUSE | BONE | KIND | TREATMENT AND RESULTS |
|---|---|---|---|---|---|
| 12. Mrs. H. | 68 | Fall | Middle femur | Simple | Anaes. Pasteboard around thigh Long external splint with traction. Perfect result. |
| 13. B. | 42 | Fall | Colles both nasal bones | Simple | Reduction. Plaster Cast. Cotton pledgets in nose. Left hospital 3rd day. |
| 14. W. S. | 14 | Fall | Colles. | Simple | Reduction. Anterior board splint for few days then a plaster cast. Result good. |
| 15. G. G. | 51 | Fall | Colles' | Simple | Anaes. Reduction anterior board splint. Result good. |
| 16. M. | 51 | Fall | Potts' | Simple | Cast. Result good. |
| 17. W. | 14 | Fall | Colles' | Simple | Reduction. Ant Board splint, massage. Perfect. |
| 18. C. | 19 | Fall | Tarsal | Simple | Cast and rest. Good. |
| 19. P. G. | 55 | Crush car wheels. | R foot and leg cpd Potts' R. leg | Cp'd comminuted 8 cpd of R. | Anaes. Amputated middle of leg. Had to reamputate owing to trauma of soft parts being more severe than at first allowed for. Rigid asepsis of Potts'. Both healed well |
| 20. B. | 38 | Fall | Potts' | Simple | Reduction. Plaster cast. Good. |
| 21. J. | 9 | Caught in cogs and chain | 2nd and 3rd phlanges of 1st finger and 2nd phalanx of 3rd. | Simple compound. | Anaesthetic. Antisepsis. Reduction. Pasteboard splints. No deformity or stiff joints. |
| 22. R. P. | 5 | Fall | Colles' with fracture in lower 1-3 ulna | Simple | Anaes. Reduction Ant. and Posterior board splints for 48 hrs. then plaster cast. No deformity or lost function. |
| 23. F. S. | 11 | Fall | Collis' | Simple | Reduction. Ant. board splint then plaster. Good. |
| 24. R. J. | 3 | Direct trauma | Middle femur | Simple | Anaes. Reduction. Long external splint, later cast. No shortening, no deformity. |
| 25. J. C. | 13 | Horse fell on leg | Tibia Jct. of lower and middle 1-3 | Simple | Reduction good. |
| 26. U. H. | 15 | Fall | Tibia at middle | Simple | Anaes. Reduction. Plaster cast. Perfect. |
| 27. M. B. | 70 | Fall | Intracapsular neck femur | Simple, no impaction | Anaes. Reduction, plaster cast. Pneumonia, delirious. Tore off casts. Got out of bed. Sand bags 1½ inch shortening. Walked with a crutch. |

| CASE | | AGE | CAUSE | BONE | KIND | TREATMENT AND RESULTS |
|---|---|---|---|---|---|---|
| 28. | F. | 12 | Fall | Int Condyle Humerus | Simple. Extended into joint | Reduction. Paste board splint arm dressed at right angle. Perfect. No impairment motion in joint. |
| 29. | S. W. | 37 | Crush | Lower 1-3 Tibia | Simple | Cast with antiseptics to skin injuries. |
| 30. | L. | 25 | Direct blow | 4th metacarpal | Simple | Anterior board splint. Perfect. |
| 31. | D. | 31 | Gunshot | 2d phalanx 3rd finger | Compound comminuted | Finger was infected. Anaesthetic. Amputated. |
| 32. | C. C. | 29 | Direct blow | Left Nasal | Simple | Antiseptic, Cotton pledgets. No deformity. |
| 33. | J. B. | 13 | Gunshot | 2nd phalanx 1st toe | Compound | Bone protruded from infected granulations Hot boracie acid applied for few days. Bone separated at line of demaration and soft parts healed. |
| 34. | C. J. | 6 | Fall | Left clavicle | Simple | Reduction. Axillary pad, modified velpean. Good |
| 35. | B. S. | 43 | Fall on head 35ft struck on sidewalk. | Temporal, sup. Max-illa, occipital | Cpd of tempora others simple | Death in 35 minutes. |
| 36. | M. | 65 | Fall | Intracapsular neck femur | Simple | Refused to treat patient at home and he passed to another physician |
| 37. | H. | 50 | Fell on head | comminuted fracture 7th cerv-spine 4th Dorsal | Simple | Cord crushed. Immoblized. Died 5th day. |
| 38. | B. | 15 | Fall | Colles' and ulna | Simple | Anaes. Reduction anterior and posterior board splints. Good. |
| 39. | H. | 13 | Fall | Shaft femur upper 3rd | Simple | Anaes. Reduction, long external and short internal splints. |
| 40. | Mrs. C. | 68 | Fall | Intracapsular neck femur | Simple. | Anaes. Reduction Long external splint, short external for 2 days. Removal to hospital used Maxwell's anatomic dressing with traction. Perfect result. |
| 41. | A. | 20 | Crushed by machinery | 2nd phalanx great toe 1 and 2 of 2 and 3 toes | Cp'd commuin- | Anaes. Amputated crushed bones and soft tissue. |
| 42. | W. L. | 31 | Direct blow fall | Nasal styloid process of fibula | Simple | Cotton pledgets in nose. Splint binders board on foot and leg. Good result. |

DISCUSSION.

DR. AXTELL.—The treatment of deformities should hold a great deal of interest for every physician. There is scarcely a neighborhood anywhere in the country which has not its deformed children, many unable to walk. Everyone in the neighborhood knows them. Modern surgery is doing wonders in the way of treatment, and it is almost marvelous sometimes how these crippled and twisted little ones may be actually developed and unfolded, and limbs again be made useful. Many times deformities are reduced, and patients supposed to be cured, which later developments prove a great mistake. I think the main point which Dr. Naismith brought out in his paper is the importance of restoring and maintaining muscular equilibrium by proper exercise; exercise in any way you can get it. This is more essential than to put a patient into jacket and brace—these only serve as bridges or helps for the time being, and should be dispensed with as soon as sufficient muscular power and tone are developed to do the work without their assistance. I notice that Dr. Naismith speaks a number of times about deformities of the upright position. Our very best authorities maintain that lateral curvature of the spine comes from this fact. Someone has said that "man has lately assumed and with difficulty maintained the upright position, both physically and morally." The upright position is without doubt the cause of many of our deformities. We have simply stopped too soon in development; it is a lack of unfolding,—a lack of evolution.

In regard to fractures, unfortunately they do not all give as perfect results as we would wish. I would like to mention a few points in regard to treatment,—some that strike me. I would certainly use anaesthesia in every case possible, unless in the case of a very small or weak child. The reduction of the fracture is half the battle. After reduction, the important thing is to maintain it. If possible, fix the joint above and below the fracture and prevent motion. Most fractures that leave deformities were never properly reduced,—and I think no man can reduce a fracture quite as well with a live patient as with him under the influence of an anaesthetic. Another thing, use the X-Ray in examining fractures for reduction,—it counteracts the tendency to careless reduction of the fracture, as well as serves as a safeguard to the physician in case of a malpractice suit. This is an age of malpractice suits, and if you are worth enough, you may be threatened with them. In regard to the dressing,—the more you become used to plaster of Paris, the less cotton will you use. Most experts do not want any cotton, stockinet is better. Be careful about bandage under cotton. A great mass of cotton soon tends to let the limb loose, and you get motion, and this must be guarded against.

DR. JONES presented the plan of instituting a reform in modern school methods, and suggested that there should be some one in every primary and grammar school whose duty it is to look after and intelligently direct the care of these muscular deformities among school children; that the attitude of the physician should be a prophylactic one, thus curing these deformities in their incipiency.

DR. PURDUE spoke in highest terms of the use of the Maxwell splint in all cases of involvement of hip joint, in old and young, and referred to care reported by Dr. Clark, this being the second case upon which he had used this splint. When called to see the case, there was no deformity, but inability to move the limb. He put the patient to bed and kept her there. Patient did not suffer an hour after being put to bed and splint applied, but was perfectly comfortable; slept well, felt well,

got well. The doctor said that he had been educated to believe that a person who suffered this sort of fracture was deformed for life, but that the Maxwell splint gave as perfect result as one could wish.

DR. SAWTELL emphasized the importance of the first dressing—if you expect a cure in case of compound fracture, your first dressing must be clean.

DR. HUGHES agreed that the first dressing decided the case. He advised a bold and free incision in order to thoroughly cleanse and expose parts, even if it became necessary to sever tendons to do so, and tissues had to be restored by sewing. He strongly advised the opening of the spinal canal in all such cases as the one described,—under the usual antiseptic and aseptic technique it might do a world of good, and cited one of the cases upon which he had operated for similar trouble, of a man who served his country two or three years after operation. In all such cases the doctor said that it was imperative that the individual should not be carelessly moved, but a plank or board should be secured, and patient placed gently upon it, without permitting lateral movement or bending the head, and taken to a place for permanent treatment and care. One should place the bed on an incline of at least a foot, so as to produce longitudinal traction, and if paralysis continues, unhesitatingly open up the spinal canal for the purpose of relieving the pressure which is producing the paralysis.

DR. BOLTON recommended from experience the utility of the Maxwell splint. He considers it the ideal splint for all hip fractures and dislocations in old and young.

DR. MITCHELL said that he was afraid to use the cardboard splint for Colle's fracture, and recommended the use of the plaster of Paris splint, modified as follows: Allow it to harden slightly so that it may be bent and moulded to the hand, wrist and arm, and then allow to set; in this way mobility was secured without the weight of the ordinary plaster of Paris splint.

DR. GODDARD.—There are hundreds of children hopping about with ankle splints and hip splints, and nine out of ten are expected to get well on splints. Splints and braces cure nothing,—merely maintain the parts in position while you restore them. The statement of Dr. Naismith that a muscle absolutely unused for fifteen years was still a muscle startles me. It must have been in some kind of use to maintain its muscular strength.

DR. BROWN emphasized the importance of the use of an anaesthetic in fracture cases by citing a case in his own experience: Boy kicked in the head by horse; seen first thirty six hours after injury. Dr. Brown wanted to give an anaesthetic but the parents opposed it. He cleaned out the wound, and diagnosed fracture of skull. In about a week or ten days the boy developed tetanus; then he was allowed to give anaesthetic, and trephine. He found a piece of horses hoof away back in the skull, but it was too late to do any good. The lesson is plain.

DR. NAISMITH thought that it was the duty of doctors to insist upon parents having early corrective measures instituted for overcoming on-coming deformities in their children, that a little care and manipulation at the proper time might cure; that there was no need of boys and girls growing up knock-kneed, bow legged and otherwise deformed; and that a world of misery and suffering might be thus spared parents, as well as children, were proper measures taken before the cases became incurable.

A lively discussion then arose in regard to the use of traction in impacted intracapsular fracture. DR. CLARK was in favor of it, and said that the amount of traction should be in proportion to the build of the patient; just enough to reduce shortening and balance the pull made by the muscles.

DR. BOWERS and DR. HUGHES protested against it, and said that an artificial joint might thus be produced,—never to use traction.

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## THERAPEUTIC FIRST PRINCIPLES.*

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The rapid growth of medical literature in these last days has brought with it a danger—a danger specially imminent in therapeutics. The ease with which even the wildest dreamer may get into print necessitates a critical reading of our journals—something not needed when journals were fewer and commercialism less rampant. Then the flood of advertising circulars pouring into our offices will force even the most careful physician from his moorings unless he by frequent review keeps his hold on first principles. The tendency is, even with the best minds, to read this ephemeral literature more and the text books less. And this ephemeral literature will cause its readers to forget the nobler ideals of our profession and to bow the knee to popular and commercial success.

It strikes me that the first principle which we are liable to forget is that it is nature herself, rather than our treatment which is the essential cause of recovery from disease. Hence in reading highly colored case reports, we should not be convinced of the efficacy of a drug until by authentic reports of many cases under all sorts of conditions it is shown that the patient would not have done as well without the drug. It is of course nonsense to report two cases and when both seemed improved by the method or remedy to announce boldly that it gives 100 per cent of cures. Thus acetozone seemed (judging from the reports) for a short time to be about to revolutionize the treatment of typhiod fever, yet now that more and more reports are coming in, it would appear that very many of its advocates have lost their enthusiasm. This principle is pertinent also

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to the overdoing of treatment so often prevalent among those who accept the literature of manufacturing houses as Gospel. It is Nature that cures; our work is to interfere with her as little as possible; and then only to aid, not to supplant.

The real use therefore of therapeutics is, first, to help Nature remove the cause of the disease; and second, to sustain in times of shock or collapse the vital powers. If we keep this statement of our purpose in mind, we shall be less liable to stereotyped treatment and shotgun prescriptions. Thus in typhoid fever we can remove the larger part of the putrescent mass in the intestines even if we do not drive the toxines already absorbed from the entire system. We can do enough to make the effort worth while. The following out of this principle should prove an effectual check upon our use of proprietary compounds of unknown composition,—one of the greatest curses of our latter day practice.

Several corollaries follow from this statement of the purpose of therapeutics, the first of which is that the physician must know at every stage of the disease the pathological condition present and direct his efforts toward helping Nature at that particular crisis, rather than toward giving a routine treatment for the disease entity. We perhaps have gone too far in our classification of disease—so far that the most of us are apt to treat the disease rather the patient—to use a routine treatment, rather than one varied and changed according to the daily exigencies. Some one has recently suggested that the new text books on pathology and therapeutics will discuss pathological conditions and their treatment rather than diseases and their treatment. This desire to treat the condition should keep us from giving drugs which mask the symptoms, such as the acetanilid mixtures and the opiates. This principle should lead us also to examine our patients carefully every day in order to learn the pathological condition just then present. To my mind the emphasis upon diagnosis will be the best criterion for judging the claims of journal articles and advertising circulars which lay before us new drugs.

Another fact should be kept in mind in these days of vibratory massage, goat lymph, and secret nostrums and that is, that some pathological conditions will yield to no treatment whatever. It is a great temptation when a patient with cancer, for instance, comes to us and tells us that his former physician would give him no encouragement,—it is a great temptation and we deserve great credit when we do not raise vain hopes and offer him our services. Of course the square thing and the thing that will win out in the end is to tell him that the doctor was right, and that he had better go back to him. But even in cases which we retain, an early recognition of the uselessness of drugs will in the end help rather than hurt us. If it involves the calling in of the sugreon, we should even

then retain the cases longer than if we continued an unsuccessful line of treatment. For the patient's own good an early diagnosis and prognosis should be made and then instead of wasting valuable time in experimenting with new and secret nostrums we should provide for our patients the form of treatment needed. We are learning that one person in ten has some disease of the biliary tract and further that but a minute percentage of those thus afflicted can be cured by drugs or any treatment except drainage. So also we are learning that the surgeon and the electro therapeutist can help us greatly in chronic nephritis. Hence the general practitioner should prepare himself to use intelligently electricity and to operate surgically on all but the extremely difficult cases.

The action of drugs is simply chemical and is not more mysterious than other chemical reactions. Hence we should demand a very thorough knowledge of the reactions of every drug we use. This means much, but I believe that if our profession would get together along this line and study systematically our drugs, medicine would make greater advances than it has yet made. A few years ago such a demand would have been impracticable; but today with the apparatus for physiological and pharmacological research lately developed at our disposal we ought soon to know the reaction of every needed drug. The standardized drug alone should be used and whenever possible only the active principle. Here again, we would protect ourselves from the ravages of the drug combines, and on the other hand, from the useless trial of a few hundred herbs and compounds introduced into our pharmacopeia during the days of inexact knowledge This would change the course of materia medica from a cramming process to one of intense study and scientific study as well, of some fifty or sixty really effective remedies. It is funny to see how a sick druggist treats himself—every drug on his shelves which could by any stretch of the imagination have a relation to his supposed (and self diagnosed) trouble is poured into his long suffering stomach. But we do just as ridiculously when we do not throroughly diagnose our cases and select the one drug or treatment which will help Nature most to recover her balance. A little learning is dangerous—so is a superficial knowledge of the action of our drugs.

It is not improbable that this imperfect teaching of the action of drugs has had much to do with the present deplorable state of therapeutics wherein we find confusion and contradiction rampant and the secret and unknown supreme.

If what has been said be accepted as true, then there devolves upon us the duty of studying drugs more closely—of using the single standard drug, and of teaching our students the better way.

DISCUSSION.

DR. PURVIS.—This is a subject that has caused all of us a great deal of thought. Almost every day a drug man comes to our offices and leaves his samples. We should not administer these preparations unless we know what they contain. Some time ago two or three men here in our town asked me what I thought of a certain preparation. I told them I knew nothing about it. "Why, this drug man says you have used it, and have obtained excellent results from it," He had quoted me as having used it in a case of pneumonia, with excellent results, etc. I thought the thing over and remembered that the man did leave me a sample. I told him I had tried it, but did not get any results from it. It seems to me that these proprietary houses are not quite fair a great many times.

A MEMBER.—I have also most entirely excluded these set formulae that are sent about by the various houses. I find that I can come near enough to handling my cases with my own stereotyped prescriptions. It is somewhat surprising to see the list of physicians which these agents display, and the different articles bought by them. As to the action of medicine,—the doctor claims that medicine is purely chemical in action. I was under the impression that it was a physiological, or chemico-physiological action which we got from medicine.

ANOTHER MEMBER spoke of the mistake of the young practitioner when first starting out in being too theoretical; that if a patient had a pain, he wanted relief; and if you don't relieve him, he sends for another doctor who will. He spoke of one of our best pathologists who made a complete failure as a practitioner for the reason that he was so great a pathologist, and so wrapped up in theorizing about the pathology of the case, that he forgot to give any medicine.

DR. SAWHILL thought that the practice of prescribing set formulae had a very bad effect upon the doctor as well as the patient. As soon as a man makes a machine of himself, he begins to deteriorate, and places himself upon the plane of the man in the dispensary who prescribes one cough mixture for all coughs.

A MEMBER.—This is an age in which therapeutics has gone backward instead of forward, and physicians in general are to blame for it. Some are in the habit of "trying" these preparations on every patient they see, and thus we find that they are "recommended" by certain physicians who have used this particular preparation from the house of So-and-So. and their recommendation is used for advertising purposes. These firms pay a man almost anything he asks for a testimonial, and many times they succeed in securing some prominent member of the profession who occupies a foremost place in some one of our big Eastern schools, etc. You see these recommendations, and perhaps in a year or two they are not using the preparation at all.

DR. LATTA.—This is a very important subject, and one in which we should all take an interest. Many men and women give their photographs and testimonials to these various firms for advertising purposes, as our current literature will testify. Usually the man whose picture appears has a fine big mustache, or he thinks he is handsome. Nervous prostration seems to be a chronic ailment with big policemen, if we are to judge from the number of policemen whose pictures ornament our dailies As a rule you will find that these individuals who lend their pictures and testimon-

ials to this advertising scheme are obscure people, who write these things, not for money, but that they want to see their names in print. In regard to the proprietary medicines, I find it rather difficult to get along entirely without them. Now, there is antikamnia, I used that. When acetanilid came out, I dispensed with antikamnia, and used acetanilid. And there is trionial and sulphonal,—I have not the slightest idea what is in them. However, I know of no good substitute as yet. I do not like to use things whose substance I do not know, There is a class of compounds about which there is no mystery, those preparations sent out by Merrell, P. D. & Co. and and others, the composition is actually right there before your face. I would like to be able to draw a line against everything which has the least bit of secrecy about its make-up.

DR. HOXIE.—With regard to the criticism of my statement that the action of medicine is chemical, I beg to call your attention to the researches of Vaughan, brought out this year, his article having been published in the Journal of the American Medical Association,—showing that immunity is due entirely to a simple chemical reaction between the molecule, so to speak, of the bacterium and the tissue cell. The so-called "physiological action" is, if this is true, nothing more nor less than a chemical reaction. Many of our customs can be explained only on this basis. Thus we give diphtheritic antitoxin in immense doses, because the chemical affinity of the toxin for the tissue cells is very powerful; and all loose toxin must be saturated with antitoxin before the union is formed, for if once formed, the use of antitoxin is valueless.

Of course it is necessary to give relief when we are called in to see a patient for the first time; however, we should not give relief by using something that will mask the symptoms, Heat, cold, massage, or some such means do not mask symptoms as much as the opiates, for instance, do. We can give temporary relief by using some such measures,—instead of handing out to the patient antikamnia, or similar mixtures; then, when we have made a complete diagnosis of the case, we can use whatever is needed. We have much to learn from the homeopaths. They have studied the action of the individual drugs until the good old homeopath knows the action of each drug and its every indication. If we should imitate their methods in this respect, and give students in our medical schools only about fifty or sixty drugs, thoroughly taught, with a tendency or "bent" which will lead them to study drug action in every case, I think that those men would be able to use the medicine man who brings around the samples, rather than be used by him.

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## HOW TO PRODUCE ACID FAST BACILLI.*

HENRY G. GRAHAM, M. D.
Chicago, Illinois.

Of all the acid fast bacilli, the tubercle bacillus is perhaps the best known. For a time it was believed to be the only one of its kind, and that its staining property was therefore characteristic of a single species.

*Read before the Kansas Medical Society at Wichita, May, 1905.

Isolated from all other organisms by a simple test, the tubercle bacillus early became a familiar microbe and other bacilli since found to possess the same staining property are naturally associated with the one discovered by Koch.

Among parasitic forms, the bacillus of leprosy and the smegma bacillus; of those widely distributed in nature, the timothy bacillus and the bacillus of rancid butter described by Lydia Rabinowich, are well known examples.

Since all these are acid fast, the claim first made for the tubercle bacillus, that this peculair staining property was characteristic of it alone, has long since been abandoned.

Of all the acid fast bacilli the writer has ever seen, the finest specimens may be grown and produced in the greatest profusion in the following manner.

Into a vessel, preferably of glass, is poured a liter of distilled water. A ray fungus from a colony of an infusorian is washed in distilled water and placed in the vessel. A dozen or two dozens grains of wheat are washed in an antiseptic solution, rinsed in distilled water, and added as nutrient material to the ray fungus. A score of cover glasses are distributed over the bottom of the vessel to receive upon their upper surface the products of growth and of multiplication resulting from the parent body or ray fungus. A cover is placed over the vessel for protection of its contents against deposit of particles floating in the atmosphere. The vessel is now set away and is not molested for a period of four months.

At the end of that time, a cover glass is removed, dried, and its upper surface stained in the flame for one minute with carbolfuchsin solution. A 10 per cent solution of sulphuric acid in water is now applied until no red shows beneath the solution, when the acid is removed by washing in water, Wood alcohol, full strength is now employed to remove still more of the magenta red, and after rinsing in water, the specimen is counter stained for five minutes in an alkaline solution of methylene blue. After rinsing in water and drying it is mounted in Canada balsam.

We now search for the granule which forms in the walls of the endoplast, for from this is the acid fast bacillis directly derived.

If this is of under size, or if fission has not taken place, the bacillus has not yet formed, and the culture is set aside for another month.

At the end of the fifth month the staining process is repeated with another specimen removed from the culture as in the first instance, and the bacillus sought for as before.

It may be necessary to put it aside for another month or even longer, in order that the granule may have sufficient time to develop into the acid fast bacillus.

Anyone who will take the trouble to do so may develop from an in-

fusorian a bacillus that exactly resembles the bacillus of Koch in form, size and staining property.

It is not necessary to start the culture with the form of infusorian here designated, "ray fungus," but it is convenient. Another form could be employed for the purpose. The rayed body, because of its large size, is more easily freed from foreign material and the culture, which may have to be kept for many months, is more readily kept free from contamination.

It will be remembered that an individual protozoan or zooid is popularly regarded as a single cell having its nucleus and nucleolus. Huxley named the nuclues an endoplast and the nucleolus an endoplastule. Kent employs the terms suggested by Huxley.

The endoplast just emerged from the parent body is a young organism, and the granules in its walls, develop into cilia. The ray fungus may be regarded as such a zooid with an infantile body having enormously developed cilia.

The acid fast bacillus, since it is derived from the granule which forms in the endoplast, is thus seen to be an undeveloped cilium, or what is the same thing, it is an early form of the filament of the ray fungus.

The writer has succeeded in producing a primary lesion or tubercle in the lungs of a guinea pig by simply feeding the animal infusoria. Others may do the same thing, and the foregoing explains why this may be done.

The writer has for years been of the opinion that human tuberculosis may be caused in the same way.

Elmdale, Kansas, April 24, 1905.

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## THE SCIENTIFIC BASIS OF MEDICINE.*

J. T. AXTELL ,M. D.,
Newton, Kansas.

The practice of medicine is as old as history. It was born of need and nutured by the dawning intellect of primitive man. It has been strangled by superstition and led astray by fanatics. Religion has marked it for its own and for a time has prostituted it for its own selfish aims. Charlatans have used it for a cloak and have been bold in their unprincipled

*Read before the Kansas Medical Society at Wichita, May, 1905.

career. In spite of all this, and much more, there has been a growth in medicine that is only less than miraculous. An army of earnest, conscientious mental giants have been given to it all that they had—their whole lives.

In 1543 Vesalius founded modern anatomy. Modern physiology had its first great start in Harvey. Virchow set pathology on a firm basis and rescued it from the humoral theories.

But it is in the field of infectious diseases that the most wonderful work has been accomplished and which has at last given us our first really scientific basis for therapeutics. To such men as Pasteur, Klebs, Loffler, von Behring, Ehrlick, Roux, Koch, and a score of others we are indebted for the most wonderful discoveries which taken together give us the first ray of light of really scientific truth to penetrate a multitude of blindly collected facts.

Until within the last few years the known therapeutic measures of value have necessarily been purely empirical. They are no less valuable on this account but it certainly is a great satisfaction to know something of the why they are valuable. Years ago it was discovered in Rome that persons out in the evenings were more likely to contract malarial fevers than those out during the day. It was at once concluded that night air was conducive of malarial fever. Only in recent years and since the discovery of the malarial plasmodium have we learned that it was the mosquito with its nocturnal habits that infected the evening sight seers. The use of quinine to destroy these germs, while purely empirical for so many years, was almost perfect in its technique. The use of mercury in syphilis, a disease of which we do not know the cause, is almost parallel. At any day we look may for some one to discover the cause and place this known treatment on a more scientific basis.

So long as we are able to modify physiological and morbid processes with drugs we will doubtless continue to do so even though it be in a blind and empirical manner, but every thoughtful physician longs for the day when he may know something more of the reason of things. The tendency of the times, with physicians and with the people, is for fewer drugs and better hygiene; for less cure and more prevention.

The foundation of all rational and scientific treatment is in a knowledge of the exact nature or the cause of the morbid processes. All therapeutic measures not founded on this basis are purely empirical. It would be most interesting and instructive to glance at some of the beginnings of this scientific basis. Pasteur's study of fermentation was one of the very first. This principle alone, when carried to its ultimate conclusion, has made modern surgery possible. He discovered the effects of the yeast spores. Here was a vegetable that needed neither light nor

air; it obtained its oxygen by decomposing the liquid surrounding it. He learned how grape juice turned to wine and how milk soured. He studied the silk worm disease and showed that it was a microbe at work. In 1876 anthrax was making great ravages in France and he proved that it was the anthrax bacillus which had long before been discovered that was responsible for the disease. He and his students showed that they could reproduce these "shoots" and how they multiplied by division until one single shoot could in 2 days become a thousand million. It was easy then to see how an organism one millionth of an inch in length could kill a steer. He showed that with the prick of a needle dipped in cultures he had made he could kill a sheep in 40 hours. He showed that the same culture fed in bran mash by the stomach was harmless. That where the dead sheep were buried in the pastures the spores were carried to the surface by earth worms and were found in the earth and on the rough sharp bladed grass which when eaten by the sheep and cattle wounded the mucous membranes of the mouth and secured an entrance to the blood.

In hydrophobia no change could be found in the blood nor in the lymph and no bacteria has been discovered, but emulsions from the crushed brain and spinal cord of animals dead of hydrophobia transmitted the disease in just the same manner as in other diseases in which the bacteria had been found. The first case in which the inoculations for hydrophobia was used is of interest. It was on little Joseph Meister, a boy from Alsace who had been torn by a rabid mastiff. He had daily inoculations for 30 days which in no material way interfered with his comfort and he eturned to his home cured.

Pasteur and his student started a poultry yard to study chicken cholera. From culture tubes of the bacilli of chicken cholera other birds were inoculated and some were found more susceptible than chickens themselves. After a summer's vacation one of the culture tubes was found unsealed and exposed to the air. The fowls inoculated from it when fresh had died, when used after being left unsealed until "spoiled" it was found comparatively harmless. And most remarkable of all was that after using the "spoiled" culture the fresh and virulent cultures were harmless for this particular fowl. Thus was discovered the "attenuate viris."

The same principle was applied to anthrax with similar results. The animals could be rendered immune by being inoculated with serum of an animal made immune by repeated injections of attenuated virus. But he also discovered another principle: By inoculating certain animals with bacteria and others in succession from the blood of the dead one the virulence of the bacillus became much more intense at it passed through

successive animals and the period of incubation became much shortened. Where the natural period of incubation was from 15 to 30 days he succeeded in reducing it from one to three days. Sometimes this virus was passed through a hundred different animals and it became so virulent that it would kill in a few hours. It could be attenuated, however, by oxygen or heat or other methods until a dose less than fatal could be injected and the re-action would soon be over. Repeated doses of increased strength could then be used and repeated reactions secured until the animal would become immune before the natural period of incubation had elapsed. This was indeed preventative treatment and here was a great ray of light on the question of immunity—the greatest problem before the medical world today.

Some animals are immune to certain diseases and not to others. Some animals have certain diseases in a lighter form than man and others in a more virulent form. White rats, adult dogs, many kinds of birds and frogs are naturally immune to the bacillus of anthrax, which is very fatal to cattle, common rats, field mice and to man. Algerian sheep resist the organism while other breeds of sheep readily succumb. Dogs are practically immune to tuberculosis while guinea pigs are killed by the most minute dose of the bacillus. Rats and mice are not susceptible to diphtheria. In none of these cases, however, is the immunity absolute. By altering the circumstances of the animal it is generally possible to render it susceptible to the disease. Thus by keeping frogs at a raised temperature it is possible to infect them with anthrax and by over tiring animals by excessive work they may be made susceptible to infections with organisms to which they otherwise possess almost complete immunity.

Every physician knows by experience how increased vigor and plenty of oxygen, a full stomach and cheerfulness render one more nearly immune than the opposite, over-work, heated rooms, fasting, and worry. A case is reported of two medical students who for a space of two months regularly visited a scarlet fever ward without contracting the disease. One day they visited the ward when they were overtired with severe exercise and had been fasting for five hours. Their resistence was lowered and both contracted the disease from which one of them died.

Everyone knows that having certain diseases, as measles or small pox, renders us practically immune to a second attack while other diseases as diphtheria or septicemia do not render us immune. In fact in some diseases, as erysipelas, an increased liability exists after once having an attack. It is probably true, however, that there is in each case a period of immunity following each disease, of varying length but that in some cases it is so short as to be useless and is overlooked.

Infectious diseases cannot be said to be cured until the invading or-

ganisms are all destroyed or driven out of the body. Some pass out through the urine, some are expectorated or pass off in ulceration or other ways. The greater number, however, must be destroyed in some way within the body. They may be seen sometimes undergoing a process of degeneration, becoming granular, and finally breaking up and vanishing. It is an analagous process to digestion. In a local infection in which the organisms have established themselves there takes place first a dilatation of blood vessels with increased blood supply and the escape of a quantity of blood serum into the interstices of the tissues followed by a migration of leucocytes through the vessel walls toward the location of the invaders. These leucocytes seem to constitute a defensive force which has come to do battle with the microbes. If the bacteria are virulent they cause a destruction of some of the cells of the body at the point where they settle and also succeed in killing many of the first leucocytes which come to attack them. This may go until dead cells, leucocytes and bacteria forming what is known as an abscess reaches the surface and the abscess is discharged. If however, the bacteria are not sufficiently virulent to establish themselves in the tissues there is a degeneration of the germs, a subsidence of the inflammation and no abscess or supuration occurs. It is not so easy to study this process when the germs enter the general circulation but even here we have an increase in the leucocytes called "leucocytosis" which seems to be a similar process. This occurs in pneumonia and in septicemia but not in enteric fever.

In most infective diseases the temperature of the body rises considerably, often to the alarm of the patient and physician. It is now known that most bacteria thrive best at the normal temperature of the body or about 98½ Fahr and that a temperature of 104 to 105 seriously retards their action; so that fever is probably a preventative or defensive measure. Metchnikoff's theory of phagocytosis, which means "to eat a cell," must probably be modified as the leucocytes are now generally supposed to be more scavengers than soldiers. It is probably the fluids of the body instead of the cellular elements that constitute the opposing factors to the invasion of the bacteria. When all formed elements such as the corpuscles have been removed from the blood it has still been found to have an inhibitory action and it is supposed to be a chemical substance in the serum of the blood which neutralizes the alkaloidal poisonous products of the bacteria. It is in the line of chemistry that most of our discoveries have been made and which seems to offer most for the future. Ehrlich's side chain theory of immunity is the one most generally accepted. It is a well known law that small doses of poisonous substance often create an immunity or develop the natural resistance so that in a short time the individual may with impunity take a dose of such a quantity as would have been

fatal before he had acquired this immunity. This is true of vegetable poisons, of snake-venom, and is found to be true of bacterial toxines. Serums have been produced from the blood and these immunized animals which are either preventatives or curatives or both. It may be an anti-toxin, one which neutralize the toxins of the bacteria, or it may be anti-bacterial, which destroys the bacteria themselves. The serum of tetanus has little power as a curative agent yet it is almost a perfect preventative if used early. Fortunately we may often suspect from the nature of a wound whether there is much danger of tetanus and if so the anti-toxin should be used. In diphtheria on the other hand we have a curative anti-toxin when used early and it is an almost certain preventative of the disease. The Klebs-Loffler bacillus cannot penetrate a whole or sound mucous membrane but even a cough may be sufficient to irritate the mucous membranes enough to give it an entrance.

Bacteria have been identified as the cause of diphtheria, tetanus, glanders, tuberculosis, pneumonia, enteric fever, malta fever, septicemia, and suppurative conditions, gonorrhea, plague, relapsing fever, influenza, erysipelas, leprosy, actinomycosis, botulism and cerebro-spinal meningitis. Organisms have also been described which may have some claim to be the excitants of dysentery and infantile diarrhoea, of rheumatic fever, whooping cough, yellow fever, scarlatina, syphilis, and rhinosclerma. Miscropical animal parasites are recognized as the causes of the different forms of malaria and new additions are coming so fast one can scarcely keep trace of them. The latest thing is from Johns Hopkins University, that in the experiments on mice a serum has been prepared which has cured cancer in the mice. That much is to be expected in this line is putting it too mildly. In my opinion this is the "scientific basis of medicine."

DISCUSSION.

DR. JAMIESON spoke of the opposition with which the antitoxin for diphtheria was received, and of the years which elapsed before it became generally used. Our progress in the future will be along preventive lines for all infectious diseases. As to whether medicine is scientific or not, depends altogether upon what we consider scientific. Years hence, men will probably say that we had nothing scientific today.

DR. LATTA said that it was likely that every human being was susceptible to a great many diseases, and spoke of the susceptibility of the newcomer in a malarial district to malaria, and of the immunity acquired by the older inhabitants, and also the immunity of the negro to southern diseases, and the susceptibility of the white man. The man who indulges the morphine habit, or any other drug habit, produces within himself an immunity. It is said that men away back in the middle ages were so in dread of being poisoned that they engaged certain persons to administer to them, from time to time, small doses of poisonous drugs, until they became immune; thus even the ancients recognized this principle of the power of developing a resistance against toxic materials introduced into the body—which we call immunity.

DR. BLAISDELL said that the therapeutic principles, teachings and experince, handed down to us by the masters, comprised the scientific basis of medicine.

DR. MITCHELL thought it a great mistake to spend so much time and energy in trying to reduce temperature, which efforts might result in much more harm than the fever would actually do; that even sponging will oftentimes do more harm than by allowing it to continue. Search out and remove cause, and fever will subsided.

DR. JONES brought out the thought that there was "nothing new under the sun," that the antiseptic qualities of alcohol were studied and known by the ancients, and that many of our modern truths were discovered and put into practice centuries ago.

DR. CHAMBERS said that the various infectious diseases were no longer feared and that we could put tuberculosis out of business in less than a year if we wanted to. "Keep clean." is the secret. The aseptic idea has long been worked out in surgery to its extreme limits, and the medicine of the future will no doubt be directed toward the set of diseases that results from the wear and tear of the times.

DR. LONGENECKER here arose to say that erysipelas was yet to be conquered.

DR. ELTING thought instead of developing artificial immunities, we should conserve those things given to us by nature.

DR. AXTELL brought out the following points:

To be truly scientific we must know what we are trying to do, and why we are doing it; a knowledge of morbid processes absolutely essential.

The formation of drug habits is a form of immunity which is developed by excessive and long-continued use. Man can become immune to almost anything,—opium, snake venom, vegetable poisons, this is simply developing the natural resistance of the body cells.

Leukocytes, instead of being a protective principle, may be a menace by carrying infection to other parts, the real protective principle residing in the serum of the blood.

Fever is an open question; we would not dare say that it would just be as well not to use any therapeutic measures against it, we do not know. We do know this: a patient may be kept normal in temperature with drugs, etc., during the entire course of a disease, and he will surely die.

(Most micro-organisms thrive best at normal body temperature, thus it would seem that fever is a protective measure, inhibiting, rather than enhancing their virulence.)

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## SOCIETY NEWS.

**The Golden Belt Society.**—The regular quarterly meeting of the Golden Belt Medical Society was held in I. O. O. F. Hall, Herrington, Kansas, Thursday, October 5, 1905. President E. R. Cheney being absent, meeting was called to order by the second vice president, F. G.

Lagerstrom. The regular routine business was transacted and the following physicians elected of active membership:

Dr. R. S. Magee, Topeka, Kansas, graduate of Kansas City Medical College, class of 1890.

Dr. G. E. White, Holland, Kansas, graduate University Medical College, Kansas City, Mo., class of 1905.

Dr. Daniel E. Esterly, Topeka, Kansas, graduate of University of Pennsylvania, class of 1893.

A committee was appointed to draft resolutions of the death of the late Dr. E. A. Donmyer of Herrington, Kansas.

Presentation of a case for diagnosis by Dr. J. D. Riddell of Enterprise, Kansas:

Mr. A.—age 39. German, father and mother living and in good health, brothers, 2 dead, died when babes; one sister living now, 35 years old and in good health. Mr. A. was a moulder up to 1902 since which time he has been employed by a club in Topeka. Moderate user of wine and beer, but claims never to have used either immoderately. Never indulged in periodical sprees. Denies absolutely any specific disease and gives no symptoms of any symptoms of syphilis.

Always enjoyed good health up to December, 1904. At that time patient began having pain in back across the lower lumbar region and through the bowels. Had a dragging sensation in pelvis and a desire to go to stool. If excited or startled or amused and laughed heartily the desire to stool was produced at once. When bowels move sickness of the stomach is produced and often vomiting.

Shortly after first symptoms the nasal passage became painful and bled freely if nose was blown. The left nostril was the more sensitive A few weeks later the left side of the head began to be affected with sharp shooting pains. The pain would start just anterior to auditory canal and run up to the top of the head. A similar pain on right side was not nearly so severe. These pains are still experienced but not so severely.

Following the appearance of these pains came a gradual sensation of tingling and tightness of the skin across the forehead, then is gradually extended all over the face and down over chin. Double vision up and down was experienced due to an abnormal dilatation of the right pupil, the superior rectus and internal rectus muscles of right eye were paralyzed. An abnormal desire to sleep was present all the time, could sleep 18 hours a day.

Has taken treatment for syphilis, has been to the hot springs but has had but litttle relief.

Has lost weight, from 196 pounds to 152 pounds but has not lost any for the last six weeks.

At present patient eats well, but sleeps too much.

Bowels cramp some and vomits almost every day but no pain when palpated.

Urine analysis, negative, some difficulty in passing urine, flow starts and stops, then starts and stops. No enlargement of prostate gland.

Dr. O. R. Brittain of Salina, Kansas read an interesting paper entitled, "The Practice of Medicine in Mythological and Prehistoric Times." The paper was discussed by Drs. McVey, Lindsay, Riddell, Ketchersid,

Alkire, and Magee. Many ideas and practices of antiquity were brought out by the essayist, showing them theoretically to be closely allied to those of today.

Dr. F. G. Lagerstrom of Salina, Kansas, read a paper on Cystitis giving the many causes, pathology and treatment. The essentials of the treatment were: Removal of cause, rest, irrigation with saturated solution of boracic acid and salol internally. The above was discussed by Drs. Harvey, Riddell, Ketchersid, Klingburg, Lindsay, Crawford, Brittain, McVey, Magee and Alkire, all agreeing as to importance of irrigation and cleanliness, Dr. Crawford believes that a solution of silver nitrate is much better that boracic acid for irrigation.

Dr. John Punton of Kansas City, Mo., read a paper entitled "Modern Views of Incipient Insanity and Its Treatment." The essayist spoke of the errors of many general practitioners in making a correct diagnosis early in the disease, and urged a more careful study of same, bringing out the fact that a large number of the cases now in the asylums are there through errors in diagnosis, because the family physician failed to recognize the disease until incurable. These cases are not considered curable after the first year. The essentials of treatment are: isolation away from friends and in some private sanitarium, forced feeding, pleasant surroundings, fresh air, tonics, frequent bathing, soporfics. Don't depend too much on drugs. Soporfics frequently have to be changed. Paraldehyde is as safe and reliable as any.

DISCUSSION.

Dr. Lindsay.—Excesses, privations, alimentary toxemia have much to do with cause of this disease. Cited one case due to fissure of rectum. Hot bath with a glass of milk and a little whiskey good to produce sleep.

Dr. Glasscock.—Chances for cure after first year slim. Individual care and attention needed. Baths, forced feeding, and isolation necessary.

A vote of thanks was extended to Dr. J. P. Klepinger of Herrington, for the elaborate entertainment accorded and Topeka was chosen as the next place of meeting, Thursday, January 4, 1906.

The following physicians were present: Drs. Brittain, Riddell, Nordstrom, White, Hawthorne, Klingburg, Alkire, MeVey, Entz, Glasscock, Money, Nicols, Ketchersid, Magee, Klepinger, Lagerstrom, Leverich, Lindsay, Shenberger, Crawford, Punton, Cheney, Sutherland,

L. Leverich, Secretary.

## NEWS ITEMS.

**Cherokee County Medical Society** met in regular session in Columbus at 8 p. m., Dr. Scoles presiding. In absence of Dr. Brookhart the president appointed Dr. Laudermilk to act as secretary. Under miscellaneous business it was moved and seconded that the next regular meeting be held in Galena. Dr. Green read a paper on typhoid fever, the discussion was opened by Drs. Brown and Huffman, followed by all present. On motion, carried, the paper was to be sent to the official organ of the society for publication. Dr. J. Dale Graham was appointed to read a paper at next meeting. Drs. Weir and Drookhart to open a discussion. Dr. J. H. Baswell of Baxter Springs was elected a member of society. Those present Drs. English, Baswell, Weir, of Baxter; Drs. Scoles, Shelley, Brown, Green, Savage, Laudermilk, of Galena; Drs. Mahan of Mineral; Dr. Ball of Hallowell, Dr. Brookhart of Scammon, Dr. McClellan of Weir City; Drs. Janes, Huffman, Graham, Johnson, Baxter of Columbus.

H. H. BROOKHART, Secretary.

**Sumner County** met September 27, with an attendance of 27. Dr. Neal read an interesting paper on the therapy of cholelithiasis, advocating the use of antiseptics and general cathartics treatment. A report of a case of gall stones was read showing a recurrence of pain six months after operation, although the patient had gained in health. Dr. C. E. Bowers of Wichita gave a talk on pancreatitis, describing the symptoms and urging opening up and drainage. Dr. G. H. Hoxie of Kansas City spoke on the relation of the state University to medical education and reported the improvements offered by the new clinical school at Kansas City. Dr. Evans and Dr. Ferris of Conway Springs were elected to membership. The meeting adjourned to enjoy the hospitality of Dr. Holliday at his office.

T. H. JAMIESON, Secretary.

**Dr. W. M. Martin**, Wellington is doing post work in Chicago.

**Dr. O. M. Holliday** Belle Plain, is doing post work in Chicago.

**Dr. S. W. Spitler** of Wellington has returned after doing post work in New York.

**Dr. Walter Rea** has closed out his practice in Norwich, Kansas and gone to St. Louis in search of health.

**Dr. I. Arthur Wright** of Americus died Sept. 28 of apoplexy, aged 64. He settled in Americus in 1871.

**Dr. W. J. Mayo** will attend the annual banquet of the academy of Medicine of Kansas City on Jan. 11, 1906. He will speak on cancer of the stomach.

**Crawford County.**—At the regular meeting of the Crawford County Medical Society held in Pittsburg on the afternoon of October 2, the following papers were read. Puerperal Septicaemia, by A. J. Dodd, M D. of Fleming; Yellow Fever, by Hugh B. Caffey, M. D., of Pittsburg; Malarial Fever, by Chas. M. Berthorf, M. D., of Cherokee.

Much interest and enthusiasm was brought on by the discussion and exceedingly profitiable and enjoyable meeting was the result. The County Society is in a a very prosperous condition with more than twenty five members and others coming in all the time. We find that meeting once a month is not too often and always place as many on the program for papers as time will permit, which is usually four or five. The society will meet next time in Girard on the afternoon of the 6th of November.

HUGH B. CAFFEY, M. D., Secretary.

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## "NUCLEIN."

From the perplexing mass of literature regarding serums and serum therapy one fact stands out as a beacon light of hope to the practical physician and that fact is the unquestionable therapeutic value of "nuclein," the basic principle of them all. Discovered and placed before the profession without the blare of trumpets it has, with little pushing, held its own, more, it has grown in favor steadily, and, when even crudely used without any particular indications being recognized for its use, it has wrought changes in the patient's condition that could only be attributed to its use. Those who doubted that it had the merit claimed for it, gave it, noted the improvement following in a short while, and then, more to prove themselves that it was not the nuclein that did it than to pursue any investigative course, stopped its use with the inevitable result that the improvement stopped too. Case after case was put upon the preparation and case after case grew speedily well, while others similar in every way, but treated without nuclein, remained pretty much "in statu quo."

One of the drawbacks that nuclein in its early days had to contend with was the association of the name of an individual with it. The profession is more or less chary of taking up any remedy that bears the name of any one man as the sponsor for its

utility; they have been exploited so often and have had so much that was false and useless thrust upon them that they very naturally refused to accept this, the most ultra of the new things, till they had some good ground upon which to build their faith.

It will be remembered by those who have followed the history of this remarkable agent that the Abbott Alkaloidal Co., placed a preparation before the profession and asked for reports for and against it. At the same time contiuous experiments were being carried on of both clinical and chemical nature to improve, if possible, the preparation and to tabulate the therapeutic uses of the remedy. Since that time, Nuclein (W-A) has been used in almost every disease known and the reports have been in almost every instance to the effect that there could be no doubt that it was a powerful systematic upbuilder. Though in the meantime some improvements had been made in the production process, there seemed to be no particular increase in the therapeutic activity and at last it was demonstrated that nuclein was nuclein no matter how produced or from what source, and that this nuclein was worthy of a first place in the therapeutic armamentarium of the physician.

Nuclein can be and is often obtained from the egg, the spleen, the thyroid gland and other portions of the animal economy, but as a matter of uniformity and to avoid danger from decomposition it has been found better to procure it from live cereal germs, involving however, chemical processes requiring much time and labor. This great work and its resultant has been accomplished entirely in our laboratory.

When administered hypodermically, nuclein promptly produces a rapid increase in the number of leucocytes; this increase varies somewhat with the subject and the disease from which he suffers, but in all cases there is a most decided augmentation. The polynuclear cells are particularly affected. These cells, as has been shown by Metchnikoff, are the most active of the phagocytes. That the bactericidal power of the blood serum when free from corpuscular elements is due to unlcein is unquestioned, this nuclein is found free in the blood and is supposed to be secreted by the leucocytes. The administration of nuclein has been shown to increase this bactericidal power of the blood many fold. The effect of a dose passes away in from thirty to forty-eight hours, hence, the necessity of continuous administration. Care, however, should be exercised not to overwork and therefore exhaust the cells. In some cases the exhibition of large doses at longer intervals is better than the continuous use of smaller quantities.

Briefly, the whole practical basis of nuclein therapy is the increase of leucocytosis; By its administration we obtain an increase in the phagocytic action and furthermore add to the number of these natural defenders of the body's health. When the system becomes so depleted by disease and the presence of morbid germs that cell repair is hindered or stopped altogether, we are face to face with a condition that has baffled science throughout the history of intelligent medication. Now the discovery of nuclein enables us to so stimulate cell-formation and phagocytosis that the "materies morbi" are surrounded, consumed, and thrown out of the body as waste, while at the same time the normal restoration goes on.

In all cases of infection of the system as well as in all anemic and chlorotic conditions, nuclein will prove invaluable. If given per os it is well to give it on an empty stomach and to give no water following so as to secure quick absorption from the buccal mucous membrane and stomach. In phthisis its administration is followed by a prompt fall in the temperature and a general amelioration of all symptoms. Indolent ulcers take on a new aspect and as granulation progresses normally and rapidly, are soon healed. In typhoid and other diseases where marked deficiency of leucocytic action is evident it is an invaluable adjunct to all treatments, and the worst

of these will produce better results with nuclein than the best without it. In malarial dyscrasias, in intestinal and gastric difficulties and in fact in all forms of disturbed metabolism (and therefore faulty cell repair) this agent should be used freely. The list if carried out would thus embrace all conditions of lowered vitality, the acute infections, such as diphtheria, tonsillitis, typhus, and all the exanthema, most disorders of the liver and nearly all the diseases of the skin.

When administerd in doses of from two to ten drops of the medicinal solution it soon causes a feeling of stimulation and well-being and many a time improvement has been manifest from the very first dose.

The demonstration of the curative action of nuclein upon septic and other morbid conditions confirms the original claim that it acts directly in the restoration of disturbed and morbid cell function. By improper or inefficient metabolism, arising from any cause, we get defective leucocytosis. The natural nuclein product is wanting. Here is where artificial "Nuclein" (W. A.) should be introduced, thereby increasing resistance to disease processes. As a non-toxic antiseptic and artificial substitute for Nature's product it restores and maintains a normal equilibrium in assimilation and finally by stimulation makes the cells work.—From a pamphlet issued by the Abbott Alkaloidal Company.

**We would like** to have expressions of opinion from our readers on the above claims for nuclein. Nuclein is not a proprietary, but is a new method of treatment. It is our duty to investigate its merits. It is the foundation, we suppose, of Bioplasm, and Protonuclein, and probably a near relative to the goat lymphs. In other words, a great number of reputable physicians are using medication based on the principle of cell stimulation. If it is successful, we should all know about it.

**The theory** of nuclein medication as outlined above seems to us partly correct. It is evidently an irritant to the bone marrow and other corpuscle building organs. It therefore stimulates—as does an invasion of pus forming bacteria—the resisting powers of the organism. It is useful therefore only in small does, and must have a double action, like atropine. We would hesitate "a priori" to use it in any disease accompanied by a great leucocytosis, as appendicitis. Furthermore since the walls of the stomach are very feebly absorbent, we should always give the drug hypodermically. So much for theory; what does actual experience teach?

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## NOTES.

**The Yellow Fever Institute** of the Public Health and Marine Hospital service is doing valuable work as its Bulletin No. 14 testifies. This details a series of experimental studies in yellow fever and malaria at Vera Cruz.

Mexico, The report was submitted in May 1904 but not published until this year. The filtered blood of yellow fever patients was injected into non-immunes to ascertain the character of the transporting substance. Mosquitoes with and without the chance to bite yellow fever patients were sliced up and studied for the organism. As results the incubation period was settled as between 2 and 6 days (1 case 7 days) and that most of the bodies thus far studied by scientists were nothing but yeasts from tropical fruits. The report is well illustrated.

**Tuberculosis.**—The Kansas State Board of Health now requires fumigation after tuberculosis. This is a step in advance. Are you helping or hindering its enforcement? If we can only awaken the profession and the public to the awful infectiveness of tuberculosis, we shall be only doing our duty. Nothing impresses the public quite so forcibly as the necessity of fumigation. So we urge the strict fulfillment of the law upon all our colleagues.

**The Stupidity of Physicians.**—Out of 20 prescriptions on file in a certain drug store in Kansas City from one physician 18 were from patients with "blind" formulae, such as, celerina, pepto-mangan, etc. The count was made because a patient had brought in a prescription for celerina, the druggist had filled it without removing the old label. When the woman had reached home and found that she had the same thing that she had seen advertised in the newspapers, she was out and out angry. She went to the druggist and accused him of carelessness. He showed the prescription and said, "If these doctors want to prescribe patent medicines, I am not going to wash off the labels. I haven't the time," Would you like to be in that physician's shoes? A nice opinion the laity must have of him.

**Dr. Senn in Colliers' Weekly** for Sept. 30, writes on the present status of American Medical Colleges. He believes that we shall soon be doing work in advance of the European centers. His statement however that the elective system is not used here is capable of misinterpretation by those not familiar with the completeness of the elective system abroad. The American elective system is devoted to the wrok of the last of the course and simply allows the student to throw his emphasis in one or another line of work while demanding a symmetrical whole. The majority of the German schools however allow the student to take a very one sided course. This the better American schools have avoided. We have still, however, much to accomplish in the America in the way of supporting the highest type of medical education and must teach our proteges to choose the better grade schools with long terms and good equipment.

**The Journal of the American Medical Association.**—It is really amusing to read some of the criticisms of the Journal of the American Medical Association. Now, since the Journal has become one of the best in the United States, and no doubt, is displacing on the subscription list some medical journals, the latter have a marked tendency to grow irritable. This will not do. The American Medical Association is above any one journal and medical journalism will be compelled to adjust itself to the wants of the association.

Pe sonally, we can not grow bitter though we feel that the Missouri State Medical Journal is utilizing some of the material which we might have obtained and it certainly keeps down our subscription list to some extent.

But the welfare of the Missouri State Medical Association is above the success of a medical journal, and while we have heretofore collected some medical news, which is now done more completely by the Missouri State Journal, we feel that we must seek to serve the medical profession in some other way.

There can be no doubt that a few independent medical journals will be compelled to suspend publication, when all the States have official journals. We are sorry for the journals and journalists but still feel that the profession is progressing and we are thankful. Hence we are not in sympathy with the movement noticed here and there that discredits and even condemns the work of the editor of the Journal of American Medical Association.—**St. Louis Courier of Medicine.**

We commend this attitude and feel positive that it will win out better than the attitude of those who "kick against the pricks."—EDITOR.

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**Civil Service Examination** for physician in the Indian Service Nov. 22. Add.ess U. S. Civil Se vice Commissioner at Washington. Age 25 to 55. Several wanted.

# THERAPEUTIC ACTION OF CHEMIC SALTS.

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(Continued.)

## ACTION OF HYPERISOTONIC OR ISOTONIC SOLUTIONS.

This consists mainly in the withdrawal of water and the penetration of the salts into the cells where they act as foreign bodies and may cause solution or precipitation of cell constituents By osmosis they will lead to the removal of some of the normal salts. The final effect of these changes will be an irritation nutritive or functional according to the nature of the cell. Locally they act as mild irritants as in stimulation of skin and resulting reflex as from sea and salt baths.

A similar stimulation is exerted upon the walls of the alimentary canal notably in stomach, before such solutions suffer dilution. Inasmuch as they will stimulate all the cells with which they come in contact, their action will not be superficial but deep, and as they are quickly removed they do not cause permaennt change. In this they differ from most gastric irritants which produce superficial but persistent action. The stimulation by salts may therefore be used for a considerable time with benefit in certain cases of atonic dyspepsia.

Some salts given in large amounts and concentrated form may produce fatal gastro enteritis because the irritant or caustic effect overshadows all other actions.

Hyperisotonic solutions will be reduced to isotonic before they are absorbed. They will have considerable salt action because of molecular changes, modifying metabolism and acting as diuretics, being especially useful in dropsy dependent upon metabolic derangement. Salts existing in the blood in least amount will be the most active, hence potassium salts are more efficient than sodium salts as alteratives. The diffusibilty of the salts will modify its action. If it does not readily penetrate into the cells, but passes the kidneys without difficulty it may be excreted without influencing metabolism.

If hyperisotonic solutions are injected directly into the circulation their main effect will be upon the nervous system, principally upon the medulla, causing stimulation followed by paralysis, symptoms similar to asphyxis The phenomena of uremia depend partly upon the increased molecular concentration of the blood. Therapeutic intravenous injection

should be isotonic with the blood and contain the same proportion of different salts. Solutions for enteroclysis or hypodermoclysis thould have similar composition.

(To be continued)

## STATE BOARD QUESTIONS

(Continued)

April 25, 1905,

ANATOMY AND HISTOLOGY.

1, What structures will be divided in amputating the thigh at the middle third? 2, Describe the portal circulation. 3, Name all the bones of the foot and ankle. 4, Name all the muscles attached to the scapula. 5, Name the coverings of an oblique inguinal hernia. 6, Give the muscles, nerves, and vessels between the wrist and elbow. 7, Give the histology of the different structures of the heart, kidneys and liver. 8, Give the histology of the blood. 9, Describe the foetal circulation. 10, Give the histology of the spinal cord.

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